

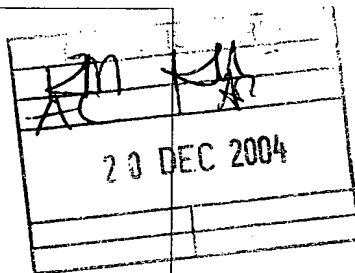
PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

To:

CARDUS, Alan, Peter
Marconi Intellectual Property
Crompton Close
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WRITTEN OPINION
(PCT Rule 66)

PINK SLIP ALREADY ISSUED
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CONFIRMATION OF FAX

Date of mailing
(day/month/year) 15.12.2004

Applicant's or agent's file reference
P/63767/GPTX14

REPLY DUE **within 1 month(s)**
from the above date of mailing

International application No.
PCT/B 03/05516

International filing date (day/month/year)
14.10.2003

Priority date (day/month/year)
14.10.2002

International Patent Classification (IPC) or both national classification and IPC
H04J14/00

Applicant
MARCONI COMMUNICATIONS SPA

1. This written opinion is the **first** drawn up by this International Preliminary Examining Authority.
2. This opinion contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☒ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application
3. The applicant is hereby **invited to reply** to this opinion.

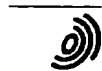
When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also: For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.
4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 14.02.2005

Name and mailing address of the international preliminary examining authority:



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I. Basis of the opinion

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed"*):

Description, Pages

1-27 as originally filed

Claims, Numbers

1-46 received on 27.10.2004 with letter of 20.10.2004

Drawings, Sheets

1/5-5/5 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☐ This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

6. Additional observations, if necessary:

IV. Lack of unity of invention

1. In response to the invitation (Form PCT/PEA/405) to restrict or pay additional fees, the applicant has:

- ☒ restricted the claims.
- ☐ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ neither restricted nor paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied with for the following reasons and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees:

3. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this opinion:

- ☒ all parts.
- ☐ the parts relating to claims Nos. .

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1,3-7,11,13-17
Inventive step (IS)	Claims	2,8-10,12,18-46
Industrial applicability (IA)	Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

- 1 Reference is made to the following documents:

D1: US 2002/004843 A1 (DAVIES ELWYN ET AL) 10 January 2002 (2002-01-10)

D2: US-B-6 327 6691 (CROSLIN WILLIAM D) 4 December 2001 (2001-12-04)

- 2 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of **claim 1** is not new in the sense of Article 33(2) PCT.

The document D1 discloses (the references in parentheses applying to this document):

A data communications system comprising a plurality of nodes and a plurality of links providing connections between the nodes (Figure 1);
comprising a subset of the links and nodes for forming a worker path for carrying worker data through the communication system (paragraph 44);
in which the system comprises a further subset of links and nodes for forming a protection path for carrying non-worker data in the absence of a fault in the worker path (paragraph 43) and for providing an alternative path for the worker data in the event of a fault in the worker path (paragraph 43);
in which the system comprises protection means, in which the alternative path is predetermined by the protection means prior to the detection of a fault in the worker path (paragraph 21);
in which the protection means is arranged to activate the entire protection path to carry the worker data upon detection of a fault in the worker path (paragraph 48);
in which the protection means is arranged to identify the location of the fault (paragraph 48) and to return the worker data to those parts of the worker path not affected by the fault (paragraph 53).

Since all features of claim 1 are known in combination from document D1, the subject-matter of claim 1 is not new (Article 33(2) PCT).

- 2.1 The same reasoning applies, mutatis mutandis, to the subject-matter of the corresponding **independent claim 11** which therefore is also considered not new.
- 3 Dependent claims 2-10 and 34-36 appear not to contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, see documents D1, D2 and the following passages:
- Claims 3, 5: D1, paragraph 43
Claim 4: D1, paragraph 65
Claim 6: D1, paragraph 49 and paragraph 56 ('When a network failure...(state 4)')
Claim 7: D1, paragraph 117
Claim 34: the additional features have already been employed for the same purpose, i.e. selecting the protection path, in a similar system, see document D2, column 2, lines 46-55. It would be obvious to the person skilled in the art, namely when the same result is to be achieved, to apply these features with corresponding effect to a system according to document D1.
Claim 35: D2, column 7, lines 15-25
Claims 2,8-10 and 36-46: the additional features appear to represent minor adjustments without inventive significance
- 3.1 Dependent claims 12-33 essentially represent the same subject-matter as claims 2-10 and 34-46, but in terms of a method. The above made objections with respect of novelty and/or inventive step therefore also apply to claims 12-33.

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BY FACSIMILE – CONFIRMATION BY POST

23 December, 2004

Your Ref:

Our Ref: P/63767.WOP/APC/

Dear Sirs,

**Re: International Patent Application No. IB03/05516
Marconi Communications SpA
Written Opinion dated 15.12.2004**

The Examiner contends that claim 1 is not new when compared with D1 (US 2002/004843 A1). D1 describes primary, traffic-bearing paths and alternate paths for providing bypasses to cope with failure of equipment in the primary path. The Examiner cites para. 0043 of D1 as disclosing the use of these alternate paths for carrying traffic in the absence of a fault in the primary path. However, it is felt that the skilled reader of D1 would arrive at a different conclusion to the Examiner. Para. 0043 states "the primary paths, and not the recovery [i.e. alternate] paths, are used for forwarding packets during normal operation [emphasis added]". This is elaborated in para. 0047 and illustrated in figure 6. D1 continues in para. 0044 to clarify that the alternate routes are used to bypass network failures. The skilled reader would conclude that the network of D1 works in the conventional way with a dedicated alternate route held in reserve to take over from the primary route in the event of a fault. If it were otherwise, a mechanism would be needed to deal with the traffic using the alternate path at the time of the failure. No such mechanism is found in D1. In particular, no such step is included in the logic flow diagram illustrating a full protection cycle as shown in figure 6.

Notwithstanding the above distinction, the claims are hereby amended to set out more clearly the invention.

The "protection path" of claim 1 as originally filed corresponds to the "set of protection paths" described at page 10 of the specification at lines 4-10. On this basis, claim 1 is amended by identifying the existence of a plurality of protection paths for one worker path, each protection path for providing an alternative path for the worker data in a different part of the worker path. This definition does not exclude some overlap between adjacent protection paths, as clearly described in the description at page 10, line 12 to page 11, line 6. Claims 1 and 2 currently on file are combined with the text taken from claim 2 reworded to reflect the changes higher in the claim 1. In particular, reference to de-activating "links and nodes of the protection path" in claim

2 as originally filed, is rephrased to refer to de-activating "protection paths" to be consistent with the change referred to earlier. Subsequent claims are renumbered accordingly.

Corresponding amendments are made to method claim 11, currently on file (now renumbered as claim 10). A combination is carried out between claims 11 and 12 currently on file with the text taken from claim 12 reworded in a similar way to the text of claim 2, to reflect the changes higher in the claim 11. Claims subsequent to claim 12 are renumbered accordingly.

In claims 5 and 15 as currently on file (now renumbered as claims 4 and 13), the reference to a plurality of protection paths introduced into claims 1 and 10 is reflected by clarifying that a node stores details of the specific protection path to which it belongs. This is based on the description as originally filed on page 11, lines 8-14.

The present invention provides fast detour activation whilst increasing the efficiency of the network when compare to conventional networks by using the pre-selected detour paths to carry traffic in the absence of a fault in the protected path. This efficiency is further improved by the ability to identify the location of the fault and to return detour paths not providing an alternative path for resources affected by the fault to standby state in which they may once again carry useful data. Such a system is not found in the cited prior art nor is there any teaching there that would lead the skilled reader to modify the conventional arrangement tp provide the sophisticated system devised by the present inventors. The present invention is advantageously applicable to connection-oriented networks such as SDH networks whereas the prior art is restricted to connectionless (i.e. packet-based) networks. For these reasons the system of Claim 1 is considered to be both novel and inventive.

Method claim 11 has features corresponding to each feature of claim 1 and is similarly novel and inventive.

The statement of invention is amended to reflect the changes to the claims.

Pages 1-3 and 28-38 are filed herewith to replace corresponding pages currently on file. In addition, a copy of the claims pages is supplied for the Examiner's convenience with the changes marked.

Yours faithfully



A.P.Cardus